USSR

UDC 621.375.82

SOROKIN, S. A.

"On the Absolute Instability of Induced Raman Emission"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2, Moscow, "Sov. radio," 1972, pp 98-101 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D864)

Translation: It was shown that feedback due to Rayleigh scattering leads to absolute instability of induced Raman emission. Conditions for excitation of the instability were determined, and the absence of a distributed feedback due to Rayleigh scattering from feedback in the resonator was shown. 7 ref. Authors abstract.

1/1

USSR

UDC 621.396.019.3

SOROKIN, S. A.

"Optimization Criterion of Radio Devices"

Metody razrob, radioelektron. apparatury. Materialy Seminara. Sb. 2 (Methods of Developing Radioelectronic Equipment. Materials of the Seminar. Collection 2), Moscow, 1970, pp 34-38 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A180)

Translation: The inadequacy of explanation of the problem of selecting the optimization criterion for radio equipment, in particular, unsatisfactoriness of the apparent reliability criterion (the probability that the output parameters will be within the allowable limits) in view of the complexity of the mathematical expression is noted. Beginning with analysis of the random processes of variation of the output parameters, a series of possible criteria are estimated: the dispersion of the relative error in the output parameters, the criterion of maximum life, the fitness reserve, and so on. Possible methods of finding the extrema of the criteria are indicated. There is one illustration.

1/1

USSR

UDC 621.396.6.019.3

LEONOVA, M. M., SOROKIN, S. A.

"Some Problems of Statistical Testing of Radio Devices"

Metody razrab. radioelektron. apparatury. No 1 (Methods of Developing Radioelectronic Equipment. No 1), Moscow, 1970, pp 174-178 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A186)

Translation: This article contains a theoretical analysis of errors in determining the numerical distribution characteristics of the output parameters by the Monte Carlo method with limited statistical data. It is demonstrated that when estimating the apriori probability of fail-free operation of a radio equipment and also during statistical testing of large systems it is possible to take the logarithmically normal distribution as the distribution law. The block diagram of the program of statistical tests of radio devices permitting investigation of the output parameter distribution laws is presented. There is one illustration and a two-entry bibliography.

1/1

USSR UDC 669.046.5

ANSHELES, I. I., FEDOSEYEV, V. V., OYSK, G. N., YEGOROV, A. V., SOROKIN, S. P., TYURIN, Ye. I., DANILIN, V. I., SELIVANOV, V. M., SIVKOV, S. S., ZYRYANOV, Yu. Ye., and BALDAYEV, B. Ya.

"Use of Electromagnetic Stirring in Vacuum Melting of Steel in a Ladle"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS), (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 222-227

Translation of Abstract: Brief technical characteristics are given of the electromagnetic stirring of steel in a ladle. Data are presented on the effect of electromagnetic metal stirring on the uniform distribution of added deoxidizers and alloying elements, and also on the significant increase in the duration of vacuum smelting. A new production technology for the ShKh15 steel is presented in which complete deoxidation and alloying is conducted in the ladle at the end of vacuum smelting. The suggested method is theoretically substantiated. The results of the first experimental melts are presented. 3 tables.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--SOUND VELOCITY IN LIQUEFIED GAS SOLUTIONS. III. ADIABATIC AND ISOTHERMAL COMPRESSIBILITIES OF THE ARGON KRYPTON SYSTEM -U-

AUTHOR-(04)-BUTKO, A.YE., MIKHAYLENKO, S.A., BLAGOY, YU.P., SOROKIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS ED.) 1970, 15(4), 563-70 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ARGON, KRYPTON, SOUND TRANSMISSION, ULTRASONIC VELOCITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0139 STEP NO--UR/0185/70/015/004/0563/0570

CIRC ACCESSION NO--AP0135636

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135636

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COEFF. OF ADIABATIC COMPRESSIBILITY AND THE SPEED OF SOUND (V) IN THE SYSTEM AR,KR INDICATED A STRONG DEVIATION OF THIS SYSTEM FROMIDEAL BEHAVIOR. ASSUMING IDEAL BEHAVIOR, THE DEPENDENCE OF V ON THE COMPN. OF THE LIQS. SHOULD HAVE A MIN. AT MOLE RATIO OF KR EQUALS 0.6 AT 120-40DEGREESK. CURVES BASED ON THE EXPTL. DATA ARE QUAL. DIFFERENT AND SHOW A STEADY INCREASE OF V WITH INCREASING AMTS. OF KR IN THE MIXTS. FACILITY: FIZ. TEKH. INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC: 620.183

BOGACHEV, I. N., VEKSLER, Yu. G., SOROKIN, V. G., Sverdlovsk

"Influence of Supersonic Gas Streams on the Structure and Heat Resistance of Metal Alloys"

Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug 73, pp 139-143.

Abstract: The influence of a high-speed airstream on the heat resistance of metal materials was studied on an installation allowing testing of erosion resistance, short-term creep, strength and thermal fatigue over a broad range of temperatures and airstream velocities. The dynamic interaction of metals and alloys with high-velocity gas streams at high temperatures has a significant influence on the properties, composition and structure of the metal surface due to the corrosive and erosive influence of the gas stream. The disruption of the stability of the material surface under dynamic loading conditions leads to significant changes in the mechanical properties in comparison with standard tests: the creep resistance under thermal cycling, strength and ductility all decrease. As the gas stream velocity and test temperature increases, these effects also increase.

Prediction of the durability and operational reliability of parts working in contact with high velocity gas streams should be based on the results of

USSR

Bogachev, I. N., Veksler, Yu. G., Sorokin, V. G., Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug 73, pp 139-143.

determination of mechanical characteristics under conditions as close as possible to usage conditions.

USSR

Titanium

UDC: 620.172.2

VEKSLER, Yu. G., VAYNSHTEYN, A. A., SOROKIN, V. G., Ural Polytechnic Institute, Sverdlovsk

"Concerning Dynamic Creep of OT-4 Alloy"

Kiev, Problemy Prochnosti, No 9, Sep 72, pp 76-78

Abstract: The authors study the influence of random stresses on the short--term creep properties of OT-4 titanium alloy in high-velocity airflows. Creep curves are approximated by using the hypothesis of aging with inclusion of the statistical characteristics of random stresses. The accuracy of the approximation is evaluated.

1/1

USSR

UDC: 620.172.2

VEKSLER, Yu. G., SOROKIN, V. G., PALEYEVA, S. Ya., Sverdlovsk

"Study of Short-Term Creep In High-Speed Air Streams Considering Variable Loadings Resulting From Vibration"

Kiev, Problemy Prochnosti, No 11, 1970, pp 74-77

Abstract: The short-term creep of type OT4 titanium alloy is studied at 500°C under a loading of 8 kg/mm^2. The short-term creep of VZH98 heat-resistant alloy is also studied at 1000°C with a loading of 4 kg/mm^2 in a nonmoving air medium and in a high-speed stream. The influence of the velocity of the stream and angle of attack on short-term creep of the alloys is studied. It is determined that an increase in the velocity of the air stream from M = 0.94 to M = 1.6 for specimens of OT4 alloy at 500°C and from M = 0.7 to M = 1.6 for specimens of VZH98 alloy at 1000°C causes an acceleration of creep and a decrease in the total time to rupture as a result of the increase in the corrosion-erosion influence of the stream. The deformation at rupture is decreased by 2-2.5 times in comparison with tests in nonmoving air. An increase in the angle of attack at constant velocity (M = 0.94) accelerates creep as a result of the increase in the mean static value of the stress component.

1/1

USSR

UDC 620.193.5

BOCACHEV, I. N., VEKSLER, YU. G., and SOROKIN, V. G., Ural Polytechnical Institute imeni S. M. Kirov

"Interrelation Between Oxidation and Creep of Nickel, Cobalt and Iron"

Moscow, Zashchita Metallov, Vol 7, No 1, Jan-Feb 71, pp 28-31

Abstract: The authors studied the short-term creep of nickel, cobalt, and Armco iron in different environments (vacuum, air, high-speed airstream) at 650°. It was found that short-term creep characteristics depend significantly on the environment, the effect of which differs for the metals studied. Oxidation processes may increase or decrease creep resistance. The creep resistance of nickel is higher in air than in vacuum, that of iron much lower, while cobalt takes an intermediate position. The creep resistance of the metals, especially iron, is lower in high-speed airstreams than in a vacuum or a stationary air environment.

1/1

USSR UDC 539.376

BOGACHEV, I. N., VEKSLER, YU. G., and SOROKIN, V. G., Sverdlovsk

"Study of Temporary Creep of Alloy OT-4 in High-Speed Air Flows in the Presence of Aerodynamic Oscillations"

Moscow, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 137-142

Abstract: This article contains a description of a device and a procedure for determining the mechanical properties and erosion resistance of metallic materials in high-speed air flows. The role of the vibrations occurring in the samples under various test conditions is also analyzed.

The proposed procedure was used to estimate the properties of materials operating in contact with a high-speed gas or air flow, in particular, for materials subject to aerodynamic heating. Under these conditions, the materials are subject not only to static but also to variable stresses as a result of aerodynamic forces whose role and significance in creep resistance has not been studied. The variable stresses from the aerodynamic forces have a random nature and constitute a complicated complex with different frequency and amplitude which can vary within broad limits depending on the test conditions and the

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BOGACHEV, I. N., et al, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 137-142

properties of the material. OT-4 titanium alloy was used as the test material, and the tests were run in stationary air (M = 0) and in a high-speed air flow at M = 0.94, 1.3, and 1.6. The investigated temperature range was 475-600°C. The angle of attack was varied from 15 to 90°. A constant load of 8 kg/mm^2 was used in all cases. The oscillation frequency of the sample under all the test conditions in the high-speed air flow was within the limits of 2,300-2,600 per second. In the investigated temperature range all the creep curves for the high-speed air flow go higher than in the stationary air environment. The creep rate in the steady state stage in the air flow is higher in all cases, and its increase is sharper when the temperature is raised. The time before rupture is reduced sharply, and earlier occurrence of both the steady creep stage and the third creep stage is observed. The strain to rupture was reduced by approximately 3-4 times. Metallographic investigations showed that the development of rupture begins by the formation of erosion pitting basically along the grain boundaries, which with time form microcracks and pores. Final rupture occurs by selective rupture of the individual microvolumes of the alloy.

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USSR

BOGACHEV, I. N., et al, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 137-142

Results of a statistical study of the random stresses caused by aerodynamic oscillations of the samples under various test conditions are presented, and some laws of variation of the characteristics of the distribution as a function of the flow velocity, angle of attack, and temperature are revealed. It is pointed out that the effect of vibrations on the behavior of OT-4 alloy during creep is less significant than the corrosion-erosion effect of the high-speed air flow on the surface of the material.

3/3

Analysis and Testing

USSR

UDC 620.10:539.376

BOGACHEV, I. N., VEKSLER, YU. G., and SOROKIN, V. G., Ural Polytechnical Institute

"Short-Lived Creep of Metals and Alloys under Aerodynamic Heating"

Moscow, IVUZ Chernaya Metallurgiya, No 4, 1970, pp 142-147

Translation: A description is given of short-lived creep tests on metals and alloys under conditions of dynamic contact with high-speed air flows. A device was used which permitted the tests to be conducted in a broad range of temperatures and loads. Short-lived creep testing of nickel, cobalt, armco iron, alloys OT-4, ZhS-98, and E143B, and steel Kh16N9T in the temperature interval from 500 to 1000°C shows that the characteristics of creep during tests in high-speed air flows differ considerably from analogous characteristics obtained under static conditions. Their changes are related to the thermal and corrosion-erosion action of the flow as well as to varying stresses which originate in the sample under the effect of aerodynamic forces.

1/1

USSR

UDC 669.24:620.17

BOGACHEV, I. N., VEKSLER, YU. G., SEGAL', V. M., and SOROKIN, V. G., Ural Polytechnical Institute imeni S. M. Kirov

"Mechanism of Deformation of Nickel Surface in High-Velocity Air Streams"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 6, Jun 70, pp 1210-1214

Abstract: A study is made of the fine structure of nickel tested on an aerodynamic device at an air flow velocity of 1.6 M in a broad range of temperatures and testing times. At low testing temperatures, a considerable increase in the density of imperfections of the crystal lattice is observed, and grain crushing takes place on the surface of the specimen. The structure contains a large quantity of erosion pittings, and deformations, according to the shape of the slip trace, occur nonuniformly in the metal. With an increase in the testing temperature, the material hardens primarily because of intensive breaking down of grains, and with an increase in the time of dynamic recovery takes place which may lead to a recovery of the deformed material. An increased testing temperature is followed by a high rate of recovery and by a recrystallization of the deformed layer. A qualitative model of the flow of the processes of hardening-recovery in the surface layers of nickel during its deformation in a high-speed air stream is presented.
The authors thank R. S. Shklyar for valuable discussion of the results of the work.
1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--SHORT TERM CREEP OF NICKEL IN A HIGH SPEED AIR FLOW -U-

AUTHOR-(05)-SOROKIN, V.G., BOGACHEV, I.N., VEKSLER, YU.G., LESNIKOV, V.P., FILIPPOV, M.A.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 2-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--NICKEL, CREEP RESISTANCE, AIR FLOW, OXIDE FILM, CRYSTAL DISLOCATION PHENOMENON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1935 STEP NO--UR/0129/70/000/003/0002/0005

CIRC ACCESSION NO--AP0108264

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108264

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 700-800DEGREES THE RESISTANCE TO CREEP OF TECHN. PURE NI IS HIGHER WHEN TESTED IN AIR THAN WHEN TESTED IN VACUUM. THIS IS DUE TO THE STRENGTHENING INFLUENCE OF AN OXIDE FILM WHICH PREVENTS THE EMERGENCE OF DISLOCATIONS ONTO THE FREE SURFACE. IN A FAST AIR FLOW THE CREEP OF NI IS STRONGTLY ENHANCED BY THE CORROSIVE EROSIVE ACTION. THE TIME TO RUPTURE IS SHORTENED.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203120014-6"

USSR

UDC 669.24:620.172.251.2

SOROKIN, V. G., BOGACHEV, I. N., VEKSLER, YU. G., LESNIKOV, V. P. and FILIPPOV, M. A.

"Short-Time Creep of Nickel in a High-Velocity Air Stream"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1970, pp 2-5

Abstract: Short-time creep of nickel in a vacuum, in a medium at rest, and in a high-speed air stream (M = 1.6) was experimentally investigated at 700-800°C under a stress of 2-4 kg/mm^2. Experiments were conducted on samples made of technically pure NP-I nickel in an aerodynamic wind tunnel intended for investigating tensile strength, short-time creep, and erosion resistance metals and alloys, at high temperatures and at air stream velocities up to Mach 4. The magnitude of deformation and time were counted from the time of sample heating up to a given temperature. The heating time was 30±5 sec. The results show that at 700-800°C the creep resistance of technically pure nickel in air is higher than in vacuum. In a high-velocity air stream the creep increases sharply as a result of the corrosion-erosion effect of the air stream. 2 figures, 1 table, 7 references.

1/1

USSR

UDC:621.762.04

TIKHONOV, G. F., PYRYALOV, L. A., SOROKIN, V. K., NIKOLAYEV, A. N., KHROMOV, V. G. and SHMELEV, L. S., Gor'kiy Polytechnical Institute

"Production and Properties of Porous Rolled Products"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 85-89

Abstract: The method of direct rolling of powders has been used to develop processes for producing porous sheets designed for use as permeable materials and fine filters. The properties of porous permeable rolled sheets made of stainless steel, titanium, nickel and nichrome are presented in tabular form. Studies performed have developed several types of filtering materials with nominal filtrations of 2, 5 and 10 μ.

1/1

USSR

UDC 621.762

TIKHONOV, G. F., and SOROKIN, V. K., Gorkiy Polytechnical Institute

"Effect of Granulometric Composition on the Technological Properties of Stainless Steel Powder"

Kiev, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 1-4

Abstract: A study was made of the effect of granulometric composition on the properties of powdered stainless steel. The initial material was powdered austenitic-type Kh18N15 nickel-chromium steel. The powder was separated into three fractions with particle sizes of 200-120 (large), 120-60 (medium), and less than 60 microns (fine). These fractions were used to produce mixtures of different granulometric composition. With increased content of medium and fine fractions the bulk weight of the dry granular material and the friability increased, while the degree of compacting decreased. The bulk weight of the dry powder and friability of the mixtures can decrease if the particles in the fine fraction do not locate in the interparticle pores of the basic course fraction.

Equilateral concentration triangles were used to depict the granulometric composition of the mixtures characterized by three variable fractions.

USSR

TIKHONOV, G. F., and SOROKIN, V. K., Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 1-4

The effect of granulometric composition and particle shape on the technological properties of Kh18N15 stainless steel powder was also investigated. The particles were rolled in a ball mill for 24 hours to obtain round particles. Mixtures were made of particles from four fractions with particle sizes of 140-100, 100-60, 60-40, and less than 40 microns. The technological parameters for particles of different shape are compared in a table.

2/2

Titanium

USSR

UDC 66.067.12

TIKHONOV, G. F., and SOROKIN, V. K., Gor'kiy Polytechnical Institute

"Production of Thin-Walled Tubular Filters From Porous Titanium Sheet"

Kiev, Poroshkovaya Metallurgiya, No 11, Nov 70, pp 97-99

Abstract: The technique of manufacturing tubular filters 57 mm in diameter and 700 mm long by the method of coiling titanium sheets with 40-45% porosity into a tube with subsequent welding or sizing of the longitudinal seam is considered. The filters trap particles of impurities less than 4 mkm in dimension.

1/1

USSR

SOROKIN, V. K.

UDC 661.762.001.669.1

"Study of the Technological Properties of Nonspherical Metal Powders"

Tr. Gor'kov. politekhn in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 5-6 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G403)

Translation: Certain technological properties of powders of Fe, Kh18N5 steel, and Ti and the filtering properties of porous rolled products made from stainless steel powders with different bulk weight are investigated. The formability was estimated by the magnitude of the minimum density of a briquette with nonpowders and minimum density of the briquettes decrease. The relation between the minimum density γ_{min} and the bulk weight γ_{bulk} is expressed by the equation: $\gamma_{min} = k + c\gamma_{bulk}$, where k and c are constants. Rolled products made from powders with low bulk weight have better filtering properties. There are 2 illustrations and 1 table.

1/1

1/3 030 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FORMATION OF THE STRUCTURE OF LEAD CHALCOGENIDE EPITAXIAL FILMS IN MICA -U-

AUTHOR-(05)-KOSEVICH, V.M., PALATNIK, L.S., ZOZULYA, L.P., ZOZULYA, L.V., SOROKIN, V.K.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1363-73

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--MICA, EPITAXIAL GROWTH, CRYSTALLIZATION, CRYSTAL ORIENTATION, ELECTRON MICROSCOPY, LEAD COMPOUND, TELLURIDE, SELENIDE, NUCLEATION, POLYCRYSTALLINE FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0856 STEP NO--UR/0181/70/012/005/1363/1373

CIRC ACCESSION NO--AP0131445

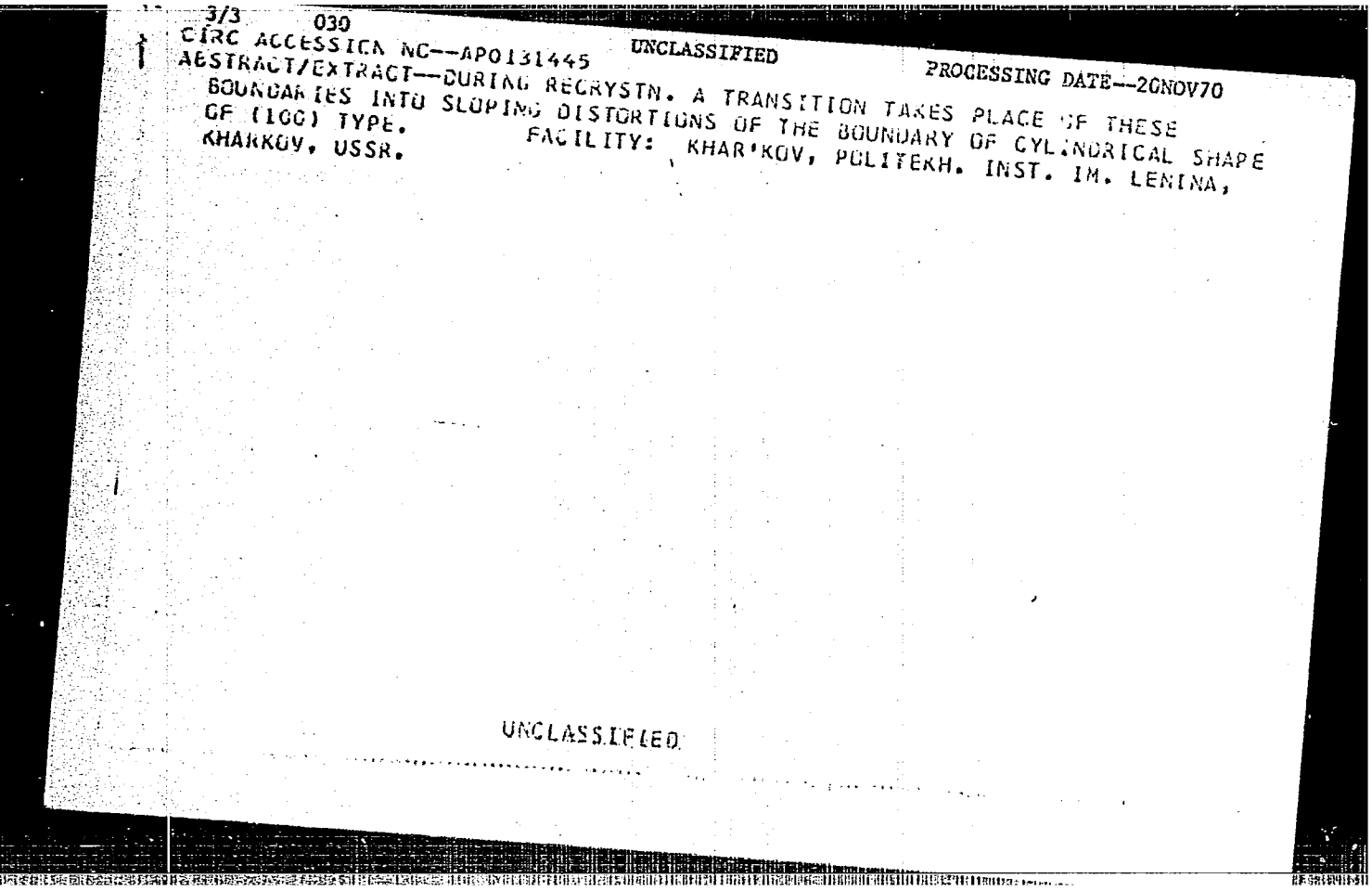
UNCLASSIFIED

2/3 030 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131445

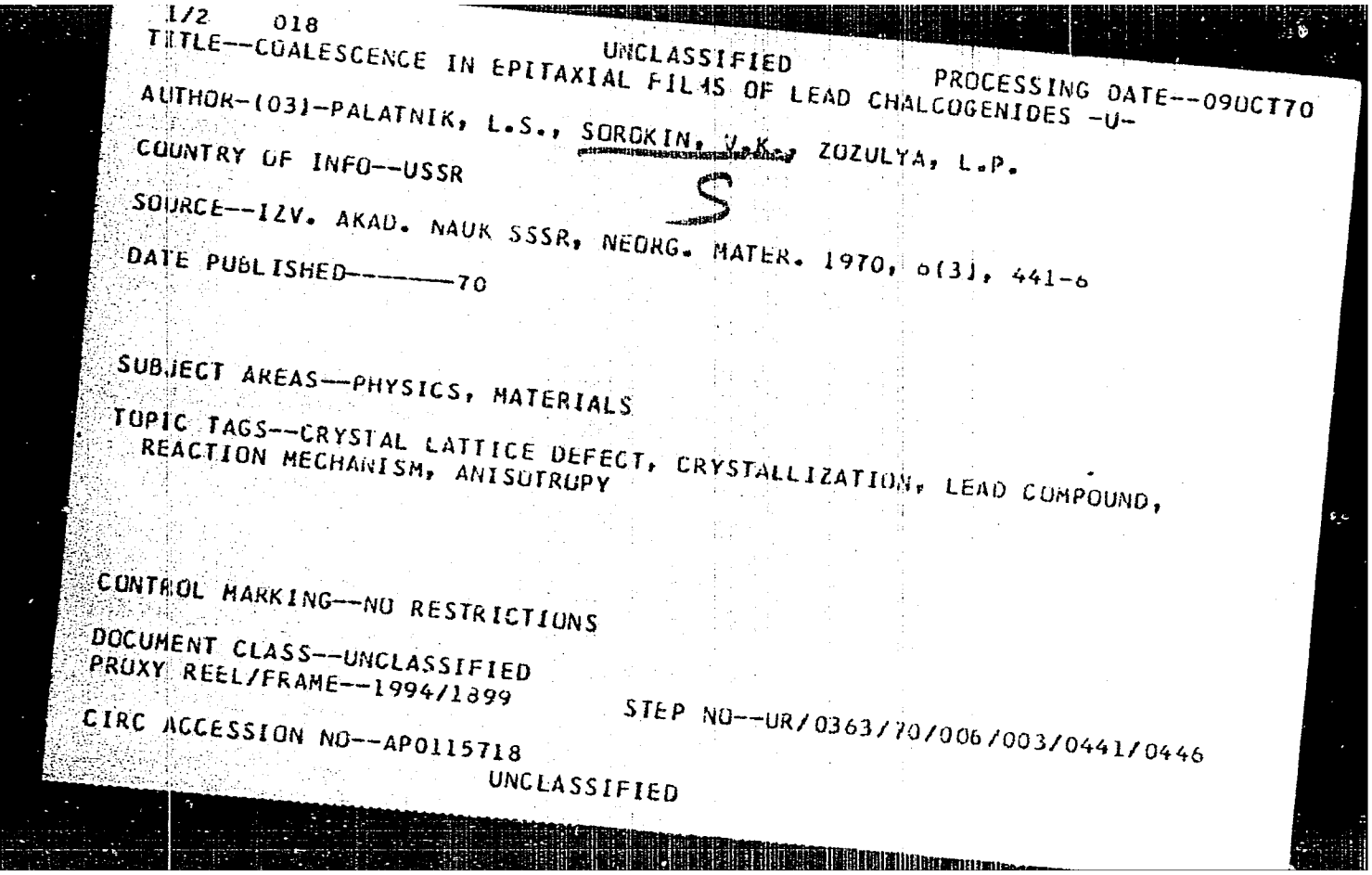
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY THE TRANSMISSION ELECTRON MICROSCOPY METHOD ORIENTATION, TYPE OF GROWTH, AND AGGREGATION OF ISOLATED PARTICLES AS WELL AS THE DEFFECT STRUCTURE WERE STUDIED OF CONTINUOUS EPITAXIAL FILMS OF PBTE AND PBSE ON MICA. WHEN THE SUBSTRATE IS AT 150-400DEGREES THE PBSE FILMS NUCLEATE ON MICA CRYSTALS IN 2 ORIENTATIONS: (111) (110) AND (001) (110) (001) (010) OF MICA. IN PBTE FILMS ORIENTATION (001) (110) APPEARS ONLY AT THE TEMP. OF T SUBP GREATER THAN 280DEGREES. PARTICLES WITH ORIENTATION (111) ACQUIRE GOOD FACES STARTING WITH THE EARLIEST STAGES OF CONDENSATION AND INCREASE PRIMARILY UPWARD. PARTICLES WITH THE ORIENTATION (001) ARE PLANE, THIN, AND POSSESS AT THE INITIAL STAGES OF CONDENSATION ROUGH CONTOURS AND A LARGE NO. OF INTERNAL VOIDS. JOINING OF THESE PARTICLES WITH THE PLANES (001) WITH THE PLANE OF CLEAVAGE OF MICA (001) TAKES PLACE BY MEANS OF DISCONFORMITY DISLOCATIONS. IN PBSE AND PBTE ON MICA VARIOUS CASES ARE POSSIBLE OF AGGREGATION OF ISOLATED PARTICLES DEPENDING ON THEIR SHAPE AND LOCATION RELATIVE TO THE DIRECTION (010) OF MICA. AGGREGATION TAKES PLACE WITH THE FORMATION OF PORES ON THE CONTACT BOUNDARY. PORES ARE LOCATED AT THOSE POINTS OF THE DISTORTED LATTICE AT WHICH, ON FURTHER CONDENSATION, DISLOCATIONS APPEAR. THE SLOWING DOWN OF AGGREGATION WAS OBSERVED BY THE BOUNDARIES FORMED WHEN DISORIENTED EPITAXIAL PARTICLES JOIN. THE MAIN FORM OF THE DEFECTS IN THE STRUCTURE OF CONTINOUS FILMS OF PBSE AND PBTE ON MICA ARE 2 DIMENSIONAL DEFECTS OF THE TYPE OF THINNING BOUNDARIES (112) NORMAL TO THE PLANE OF THE FILM.

UNCLASSIFIED



3/3 030 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0131445
ABSTRACT/EXTRACT--DURING RECRYSTN. A TRANSITION TAKES PLACE OF THESE BOUNDARIES INTO SLOPING DISTORTIONS OF THE BOUNDARY OF CYLINDRICAL SHAPE OF (100) TYPE. FACILITY: KHAR'KOV, POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED



1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--COALESCENCE IN EPITAXIAL FILMS OF LEAD CHALCOGENIDES -U-

AUTHOR-(03)-PALATNIK, L.S., SOROKIN, V.K., ZOZULYA, L.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 441-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--CRYSTAL LATTICE DEFECT, CRYSTALLIZATION, LEAD COMPOUND, REACTION MECHANISM, ANISOTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1899 STEP NO--UR/0363/70/006/003/0441/0446

CIRC ACCESSION NO--AP0115718

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115718

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENT WORK CONSTITUTES A SYSTEMATIC INVESTIGATION OF THE COALESCENCE IN THIN EPITAXIAL FILMS OF PB CHALCOGENIDES. THREE FORMS OF COALESCENCE WERE ESTABLISHED: LIQ. LIKE CONFLUENCE WITH THE BREAK AWAY OF PARTICLES FROM THE SUBSTRATE; CONFLUENCE WITH RECRYSTN.; AND SINTERING, NOT AFFECTING THE SHAPE, ARRANGEMENT, AND DISORIENTATION OF THE PARTICLES. THE SHAPE OF THE CONFLUENCE OF THE PARTICLES ATTESTS TO THE SIGNIFICANT ROLE OF SURFACE DIFFUSION AND SELF DIFFUSION. THE PROPOSITION IS EXPOUNDED ON THAT THE EXPTL. OBSD. ANISOTROPY IN THE SINTERING IS PRODUCED BY THE HIGHER RATE OF MASS TRANSFER DURING SURFACE DIFFUSION ALONG THE STEPS OF THE SUBSTRATE AND THE STEPS AT THE SURFACE OF THE PARTICLES. THE FORMER CAUSE CONFLUENCE ALONG THE STEPS OF THE SUBSTRATE, AND THE LATTER IN THE (110) DIRECTION BETWEEN THE ANGLES OF RECTANGULAR ISLETS. THE DISLOCATION MODEL OF DIRECTED MASS TRANSFER, CAUSING THE INTENSE COALESCENCE, SINTERING, AND SEALING OF THE METASTABLE CANALS, IS EXAMD. IT IS SHOWN THAT EACH OF THE ABOVE EXAMD. COALESCENCE MECHANISMS BRINGS FORTH ITS OWN SP. DEFECT STRUCTURE. FACILITY: KHAR'KOV. POLITEKH, INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PRINCIPLES OF THE GROWTH OF THIN SINGLE CRYSTAL LEAD CHALCOGENIDE FILMS -U-

AUTHOR-(03)-PALATNIK, L.S., SOROKIN, V.K., ZOZULYA, L.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 224-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LEAD SULFIDE, SINGLE CRYSTAL, SELENIUM COMPOUND, TELLURIUM COMPOUND, SODIUM CHLORIDE, POTASSIUM CHLORIDE, SEMICONDUCTOR MATERIAL, CRYSTAL DEFORMATION, CRYSTAL STRUCTURE, CONDENSATION REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0557 STEP NO--UR/0363/70/006/002/0224/0229

CIRC ACCESSION NO--AP0105542

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105542

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EARLY STAGE OF GROWTH OF SINGLE CRYSTAL THIN FILMS OF THE PB CHALCOGENIDES WAS STUDIED. PBS, PBSE, AND PBTE WERE CONDENSED ON NACL AND KCL SINGLE CRYSTALS UNDER VACUUM AT SUBSTRATE TEMPS. OF 90-200DEGREES AND CONDENSATION RATES OF 0.7-13 ANGSTROM-SEC. A NEW TYPE OF COMPACT EPITAXIAL FILM WAS FOUND, AT THE EARLY STAGE OF WHICH THERE APPEARS A BIDISPERSED STRUCTURE CONSISTING OF SMALL CRYSTALLITES WITH AN EQUIL. FACETING AND RATHER THIN ISLETS WITH ROUGH EDGES. THE SHAPE OF THE CONDENSATE PARTICLES IS DETD. BY THE RATIO BETWEEN THE RATE OF FACETING AND THE GROWTH RATE IN THE PLANE OF THE SUBSTRATE. THE APPEARANCE OF THE BIDISPERSED STRUCTURE IS EXPLAINED BY THE SPEEDING UP OF THE GROWTH OF THE ISLETS WITH ROUGH EDGES AND A SLOWING DOWN FOR PARTICLES WITH EQUIL. FACETING. DURING THE FORMATION OF THE COMPACT EPITAXIAL FILMS HAVING A BIDISPERSED STRUCTURE, ELASTIC DEFORMATION ARISES, WHICH CAN SIGNIFICANTLY INCREASE THE SCATTERING OF THE CURRENT CARRIERS IN THE SEMICONDUCTOR SINGLE CRYSTAL FILM.

UNCLASSIFIED

USSR

UDC: 546.815'22:539.238

PALATNIK, L. S., SOROKIN, V. K., and ZOZULYA, L. P., Khar'kov Polytechnic Institute imeni V. I. Lenin

"Regularities in the Growth of Thin Single-Crystal Lead Chalcogenide Films"

Moscow, Neorganicheskiye Materialy, Vol 6, No 2, Feb 70, pp 224-229

Abstract: This paper presents the results of a systematic study of epitaxial growth at initial stages in PbS films. A new method has been devised for producing a compact epitaxial film. With this method, a bidisperse structure emerges in the initial stages of growth. The structure consists of crystalline particles with balanced faceting and much finer islets with rougher edges. The shape of the condensate particles is determined by the correlation between faceting and growth rates in the substrate plane. The hypothesis on the formation of the bidisperse structure is based on a higher growth rate of islets with rough faceting and a lower growth rate of particles with balanced faceting. The formation of the compact epitaxial film from the bidisperse structure is followed by elastic deformations which may considerably increase the dispersal of current carriers in the semiconductor single-crystal film. Figures in the original article illustrate the epitaxial growth of PbSe on NaCl at 160 and 180°C and given rates, formation of a bidisperse structure in PbSe films on NaCl at 200°C and given rates, epitaxial growth of PbSe on KCl at 200°C and given rates and a defective structure of an epitaxial PbSe film on NaCl.

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USSR

Biochemistry

USSR

UDC 591.105:547.993:598.126

NIGMATOV, Z. and SOROKIN, V. M., Institute of Biochemistry, Academy of Sciences, Uzbek SSR

"Isolation of Cholinesterase From Central Asian Cobra Venom"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 6, 1972, pp 15-17

Abstract: Venom from the Central Asian cobra (Naja oxiana Eichwald) was separated by ion-exchange chromatography into 10 fractions, with cholinesterase activity detected only in fraction VI. After gel filtration on Sephadex G-25, this fraction separated into two components, VI-C-I and VI-C-II. Cholinesterase was found in VI-C-I where its activity was 46 times higher than the specific activity in the whole venom. The yield of the enzyme was 51%. The high degree of uniformity of the preparation was demonstrated by rechromatography and starch and polyacrylamide gel electrophoresis.

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USSR

NISHANKHODZHAYEVA, S. A., SOROKIN, V. M., and YUKEL'SON, L. Ya., Laboratory of Erzymology, Institute of Biochemistry, Academy of Sciences, Uzbek SSR

"Isolation and Characteristics of Toxin 2 from Central Asian Cobra Venom"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 7, 1972, pp 44-46

Abstract: The venom of the Central Asian cobra Naja oxiana E. contains two neurotropic agents: toxin 1 (described in an earlier report) and toxin 2. Toxin 2 was isolated from whole venom by gel filtration on Sephadex G-75 and then purified by ion-exchange chromatography on KM cellulose. The toxin 2 molecule consisted of 62 amino acid radicals, with only methionine, phenylalanine, and hydroxyproline absent. Toxin 2 injected into mice intraperitoneally or intravenously was highly lethal to the animals. LD_{50} was 0.13 mg/kg of animal weight, or 4 times more potent than toxin 1 and 9 times more potent than whole venom.

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USSR

UDC 577.11

TURAKULOV, Ya. Kh., SOROKIN, V. M., and NISHANKHODZHAYEVA, S. A., Institute of Biochemistry, Academy of Sciences, Uzbek SSR, Tashkent

"Amino Acid Composition of Central Asia Cobra Venom"

Moscow, Biokhimiya, No 1, 1972, pp 124-126

Abstract: Two toxins were isolated from the Central Asian cobra Naja oxiana E, each with a molecular weight of about 6500 to 7000. Toxin I contained a total of 11 acid and 9 basic amino acids, while toxin II contained 15 and 12, respectively. Despite the predominance of acid amino acids, both toxins exhibited the properties of alkaline protein. The absorption spectra in the UV region revealed the peak absorption of toxins I and II to be at 279 and 281 mμ, respectively. Neither toxin contained methionine or phenyl alanine. The amino acid composition of the toxins under study is compared with that of toxins obtained by other investigators from two other cobra species, Naja nigricollis and Naja n. atra.

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USSR

UDC 577.11

SOROKIN, V. M., NIGMATOV, Z., and YUKEL'SON, L. Ya., Institute of Biochemistry, Academy of Sciences Uzbek SSR, Tashkent

"Fractionation of Central Asian Cobra Venom on Ethylsulfonic Sephadex and the Biological Activity of the Resulting Fractions"

Moscow, Biokhimiya, No 1, 1972, pp 112-116

Abstract: Central Asian cobra (Naja oxiana Eichwald) venom was separated into 10 fractions when applied to ethylsulfonic Sephadex C-50. Fractions 4, 7, 8, and 9 proved to be toxic. Phospholipase A, cholinesterase, hyaluronidase, ATP-pyrophosphatase, and 5-nucleotidase activities were detected in one or two fractions each. The yields were highest for hyaluronidase (67 percent), cholinesterase (52 percent), and 5-nucleotidase (47 percent). Hyaluronidase and cholinesterase were found to be highly homogeneous.

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USSR

UDC 547.993:616.9.098:598.126

NISHANKHODZHAYEVA, S. A., SOROKIN, V. M., and YUKEL'"SON, L. YA., Institute of Biochemistry, Academy of Sciences, Uzbek SSR

"Terminal Amino Acids of the Toxins of Central Asian Cobra Venom"

Uzbekskiy, Biologicheskiy Zhurnal, No 6, 1971, pp 61-62

Abstract: It has been determined that the venom of the Central Asian cobra Naja oxiana contains two neurotropic agents (toxin I and toxin II), extracted from the venom. The results of determination of the terminal amino acids from the C-ends of the molecules of both toxins is as follows: Ash-Ash-COOH. With respect to the terminal amino acids, toxin II of Central Asian cobra venom is most similar to the neurotoxin of the South African Cobra Naja nigricollis and to the cobra toxin of the Formosan cobra Naja naja atra, which have an analogous sequence of amino-acid residues and contain leucine on the N-end. Toxin I differs from these toxins by virtue of the N-end amino acid (valine); this is of particular interest because of its lower effectiveness.

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USSR

UDC 591.105:577.15:598.126

YUKEL'SON, L. Ya., AKHUNOV, A., SADYKOV, E., and SOROKIN, V. M.

"Some Properties of the ATP-Pyrophosphatase and 5'-Nucleotidase of the Venoms of Vipera lebetina turanica and Naja oxiana E."

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 6, 1970, pp 8-11

Abstract: Venoms of Central Asian snakes contain various enzymes, including the highly active ATP-pyrophosphatase and 5'-nucleotidase. The object of this study was to determine the effects of the pH, temperature, and duration of incubation on the activity of these two enzymes in the venoms of Vipera lebetina turanica and Naja oxiana E. Desiccated venom samples were obtained from the Herpetology Laboratory of the Uzbek SSR Academy of Sciences. The activity of the enzymes was determined according to the amount of dissociated inorganic phosphates. The incubation samples contained 0.1 ml of a 0.1% venom solution, 0.1 ml of a 1.2% ATP solution or of a 1.5% AMP solution, and 0.8 ml of a buffer solution. Results indicate that the ATP- pyrophosphatases of both venoms have an optimum pH of 8.4-9.0 and an optimum temperature of 37-38°C. The corresponding values for the 5'-nucleotidases are pH 8.4-8.5 and 37-39°C. The best incubation period is 1 hour. Both ATP-pyrophosphatases are thermolabile. The 5'-nucleotidases are more resistant to high temperatures.

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1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ISOLATION OF PHOSPHOLIPASE A FROM THE VENOM OF THE CENTRAL ASIAN COBRA -U-

AUTHOR-(03)-SAKHIBOV, D.N., SOROKIN, V.M., YUKELSON, L.YA.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 13-16

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VENOM, ELECTROPHORESIS, CHROMATOGRAPHY, PROTEIN, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1159

STEP NO--UR/0218/70/035/001/0013/0016

CIRC ACCESSION NO--AP0123136

UNCLASSIFIED

2/2 026 UNCLASSIFIED

CIRC ACCESSION NO--AP0123136 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO FRACTIONS POSSESSING PHOSPHOLIPASE A (I) ACTIVITY WERE ISOLATED FROM THE VENOM OF NAJA OXIANA (SNAKE) USING SEPHADEX G-75 GEL FILTRATION AND CHROMATOG. ON CM CELLULOSE. ONE FRACTION WAS PURE (POLYACRYLAMIDE GEL ELECTROPHORESIS AT PH 4.7, 7.1, 8.6, AND 8.8) AND THE MOL. WT. OF I WAS 14-15,000 (GEL FILTRATION). ABSORPTION SPECTRA SHOWED A MAX. AT 280 M MU; M EXTINCTION COEFF WAS 2.2-2.3 TIMES 10 PRIME4 AS CALCD. FROM THE ABSORPTION OF A 0.1PERCENT I SOLN. THE OTHER I FRACTION WAS CONTAMINATED WITH PROTEIN AS EVIDENT FROM POLYACRYLAMIDE GEL ELECTROPHORESIS, WHICH PRODUCED 2 BANDS.

FACILITY: INST. BIOCHEM. TASHKENT, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--BRONCHOSCOPY IN DIAGNOSING CHRONIC DUST INDUCED BRONCHITIS -U-

AUTHOR-(05)-YELOVA, M.YA., MALTSEVA, L.M., SOROKIN, V.M., GENINA, O.D., FINKELBERG, E.I.

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 4, PP 56-58

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RESPIRATORY SYSTEM DISEASE, DIAGNOSTIC METHODS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1227 STEP NO--UR/0391/70/000/004/0056/0058

CIRC ACCESSION NO--AP0054122

UNCLASSIFIED

2/2 007 UNCLASSIFIED

CIRC ACCESSION NO--AP0054122 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CARRIES DATA OF CLINICO ROENTGENOLOGICAL, ENDOSCOPIC AND FUNCTIONAL EXAMINATIONS OF 97 PATIENTS PRESENTING DUST INDUCED PATHOLOGY. OF THESE 62 HAD CHRONIC BRONCHITIS, 12, PNEUMONCONIOSIS AND 23 WERE SUSPECTED OF SUFFERING FROM THE LATTER. AN ANALYSIS OF THESE FINDINGS IS SUGGESTIVE THAT BOTH IN CHRONIC BRONCHITIS AND IN PNEUMONCONIOSIS, AS WELL AS IN SUSPECTED PNEUMOCONIOSIS THERE APPEAR MANIFESTATIONS OF ENDOBRONCHITIS, MOSTLY OF SUB AND ATROPHIC NATURE AND LESS OFTEN OF HYPERTROPHIC ONE. CHARACTERISTIC SIGNS OF ENDOBRONCHITIS ARE DISCERNABLE EARLIER AND MORE FREQUENTLY THAN ROENTGENOLOGICAL MANIFESTATIONS OF THE DISEASE. THERE WERE INSTANCES WHEN ENDOSCOPIC CHANGES BECAME APPARENT IN THE ABSENCE OF BRONCHOGRAPHIC ONES. THUS, IN CASES GIVING GROUND TO SUSPECT CHRONIC DUST INDUCED BRONCHITIS OR PNEUMOCONIOSIS BRONCHOSCOPY OS TO BE REGARDED A VALUABLE PROCEDURE CONDUCIVE TO AN EARLY IDENTIFICATION OF THE AFFECTION.

UNCLASSIFIED

USSR

UDC 591.145.2

TURAKULOV, YA. KH., SOROKIN, V. M., NISHANKHODZHAYEVA, S. A., and YUKEL'SON, L. YA., Institute of Biochemistry, Academy of Sciences Uzbek SSR, Tashkent

"Toxins in the Venom of the Central Asian Cobra"

Moscow, Biokhimiya, Vol 36, Vyp 6, Nov/Dec 71, pp 1282-1287

Abstract: Two toxic agents, tentatively called toxin I and toxin II, were isolated from cobra venom by means of filtration through Sephadex G-75 and chromatography on CM-cellulose. Their homogeneity was established by electrophoresis in starch and polyacrylamide gels, and their molecular weight estimated at 6000-6500. Intraperitoneal and intravenous injections of the compounds into mice revealed that the LD_{50} of toxin I is 0.56 and its LD_{100} 0.85 mg/kg body weight, while the LD_{50} of toxin is 0.13 and its LD_{100} 0.17 mg/kg. All nonsurvivors die within 1 hr after injection. The highest nonlethal doses for mice are 0.45 mg of toxin I and 0.07 mg of toxin II per kg body wieght. Toxin II is not only more poisonous, but its concentration in the venom is four times that of toxin I. Absorption spectra of the toxins are presented.

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USSR

UDC 591.105:577.15:598.126

NIGMATOV, Z. N., SOROKIN, V. M., and YUKEL'SON, L. YA., Institute of Biochemistry, Academy of Sciences UzSSR

"Phosphodiesterase of the Central Asian Cobra Venom"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 5, 1972, p 688

Abstract: The venom was chromatographed on C-50 sulfoethyl sephadex column, ten fractions being collected. Fractions 7 and 8 showed the 5'-nucleotidase activity; the ATP-pyriphosphatase activity was distributed between fractions 6 and 7, and phosphodiesterase was found only in fraction 6, coming out concurrently with cholinesterase. Fraction 6 was passed through C-25 sephadex column, separating the phosphodiesterase from cholinesterase.

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USSR

UDC 591.105:577.15.598. 126

SOROKIN, V. M., NIGMATOV, Z., and YUKEL'SON, L.YA., Institute of Biochemistry, Acad. Sc. UzSSR

"Characterization of the Cholinesterase of Middle Asian Cobra Venom"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1972, pp 783-789

Abstract: Electrophoretically homogeneous preparation of cholinesterase has been obtained by chromatographing the venom of Naja oxiana Eichwald on a sulfoethylsephadex C-50 column. The activity of the isolated cholinesterase depends on the concentration of the enzyme, on time and on the temperature of incubation as well as on the pH. Optimal conditions are: incubation time of the enzyme with the substrate -- 20-30 min; pH -- 8.0-8.5; temperature -- 37-38°. Already at the concentration of 2 μ moles diisopropyl fluorophosphate suppresses completely the activity of cobra venom cholinesterase. The venom cholinesterase hydrolyzes acetylcholine chloride and acetylthiocholine bromide, but exhibits no effect on butyrylthiocholine bromide, in analogy to true cholinesterases. Cobra venom preparations of the cholinesterase have no lethal activity and do not amplify the activity of this venom's neurotoxins. This cholinesterase is thermally stable.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203120014-6"

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USSR

SOROKIN, V. N.

"A Rational Approach to Programming"

Nauch. Tr. Mosk. Inzh.-Ekon. In-t [Scientific Works of Moscow Economic-Engineering Institute], 1973, No 63, pp 39-47 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V705).

Translation: An algorithm is described for rewriting programs in conditional addresses as programs in true addresses. The algorithm consists of three sections. The task of the first section is to write a compact readdressing table, where each instruction in conditional addresses is assigned to binary digits of machine memory. The second section calculates the basic constants for each base address in the program. The third section rewrites the program in conditional addresses as a program in true addresses. As an example, a program for raising an integer to an integer power is studied, written in Minsk-22 computer instructions. V. Mikheyev

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USSR

UDC 591.1.15

SOROKIN, V. P. (editor)

"Effect of Ionizing Radiation on an Organism. (Concerning the Problem of the Effect of Radioactive Contamination of Water on the Reproduction of Industrially Important Fish)"

Vliyaniye ioniziruyushchey radiatsii na organizm. (K voprosu o vliyanii radioaktivnogo zagryazneniya vody na vosproizvodstvo promyslovykh ryb). T=. Polyarn. n.-i. i proyekt. in-ta mor. ryb. kh-va i okeanogr., vyp. 29 (cf. English above. Polar Scientific Research and Design Institute of Deep Sea Fishing and Oceanograph, No 29), Murmansk, 1971, 282 pp, ill, 97 k. (from RZh-Biologicheskaya Khimiya, No 3, 10 Feb 72, Abstract No 3F1462 K)

Translation: The collection contains the following articles which are of interest from the standpoint of biochemistry. V. V. Kosheleva, "On Accumulation of Radioactive Isotopes by Developing Salmon Roe"; S. A. Oganesyan, "Hystogenesis and Function of the Pituitary and Thyroid Glands in Salmon Young Under Conditions of Ionizing Radiation"; "Effect of Sr^{90} + I^{90} on the Development and Function of the Hatching Glands of Salmon"; V. L. Kas'yanov and N. A. Lukina, "Effect of X-Radiation on the Content of Glycine C^{14} in the Tissue of the Young of Atlantic Salmon"; V. S. Zlobin

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USSR

SOROKIN, V. P. (editor), Vliyaniye ioniziruyushchey radiatsii na organizm. (K voprosu o vliyanii radioaktivnogo zagryazneniya vody na vosproizvodstvo promyslovykh ryb). Tr. Polyarn. n.-i. i proyekt. in-ta mor. ryb. kh-va i okeanogra., vyp. 29 (from RZh-Biologicheskaya Khimiya, No 3, 10 Feb 72, Abstract No 3F1462 K)

and M. F. Perlyuk, "Photosynthesis and the Mechanism of the Effect of Cyanide on Cell Respiration and Accumulation of Pu^{239} by Marine Algae; V. S. Zlobin, "On the Active Phase of Pu^{239} Assimilation by the Marine Algae Ascophyllum Nodosum." N. K.

2/2

USSR

UDC: 535.853.673

GOROKHOVSKIY, Yu. N., Doctor of Sciences, GRIGOR'YEV, A. G., IVANOV, A. M., SOROKIN, V. P., STEPOCHKIN, A. A.

"A High-Sensitivity Recording Microdensitometer"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 11, Nov 70, pp 33-37

Abstract: The article is a description of the design and construction of an instrument developed by the authors -- the MD-2 high-sensitivity two-beam recording microdensitometer. The instrument is based on a compensation circuit with a single light source and a single photomultiplier as the receiver. The measuring element is a fixed gray scale placed in the same beam as the object to be measured. A diagram of the optical system is given as well as a block diagram of the densitometer as a whole. The machine output is a standard 275-mm chart recorder. The recording scale may be varied from 1:1 to 1:2000 in ten steps. The device can be used to measure optical densities up to 4.0 with a precision of $\pm$0.01 density unit on a field of 500 square microns or more. The authors thank A. P. Grammatin for calculating the optical system of the microdensitometer in his laboratory, and also A.A. Barentseva for her participation in testing the experimental model of the instrument.

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1/2 042 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--HEAT AND MASS TRANSFER IN A HEAT PIPE WITH A SODIUM HEAT TRANSFER AGENT -U-

AUTHOR-(04)-IVANOVSKIY, M.N., SOROKIN, V.P., SUBBOTIN, V.I., SHUSTOV, M.V.

CCUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(2), 319-25

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--HEAT TRANSFER, MASS TRANSFER, HEAT PIPE, SODIUM, STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1407

STEP NO--UR/0294/70/008/002/0319/0325

CIRC ACCESSION NO--AP0133359

UNCLASSIFIED

2/2 042 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133359

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT AND MASS TRANSFER STUDIES BASED ON CAPILLARY ACTION IN WICKS, APPLICABLE TO WEIGHTLESS CONDITIONS, WERE CONDUCTED AT HIGH TEMPS. IN HEAT TUBES (500 MM LONG, 25.5 MM INSIDE DIAM.) LINED WITH A NA WETTED AND SATD., NOVERN STAINLESS STEEL SCREEN 1.5 MM THICK WITH PERMEABILITIES OF 70-260 DARCIES AND EFFECTIVE PORE RADII OF 0.023-0.13 MM. THE VAPOR PRESSURE VARIATIONS AND PRESSURE DROPS (DELTAP) ALONG THE LENGTH OF THE TUBE WERE DETD. AS A FUNCTION OF TEMP. (600-800DEGREES), HEAT TRANSFER RATE (Q) LESS THAN 3.7 KW, AND VAPORIZATION ZONE REYNOLDS NO. OF 1900-3700 AND 24-47 IN THE LONGITUDINAL AND RADIAL DIRECTIONS, RESP. THE WEDGE SHAPE PORE OPENINGS OF THE WICKS PERMITTED HEAT AND MASS TRANSFER DETNS. AT DELTA P GREATER THAN 0.07 BARS BETWEEN THE PHASES.

FACILITY: FIZ.-ENERG. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 615.478.6:614.3/4:061.6

SOROKIN, V. P., Mekhanizatsiya Central Design and Technology Office, Moscow

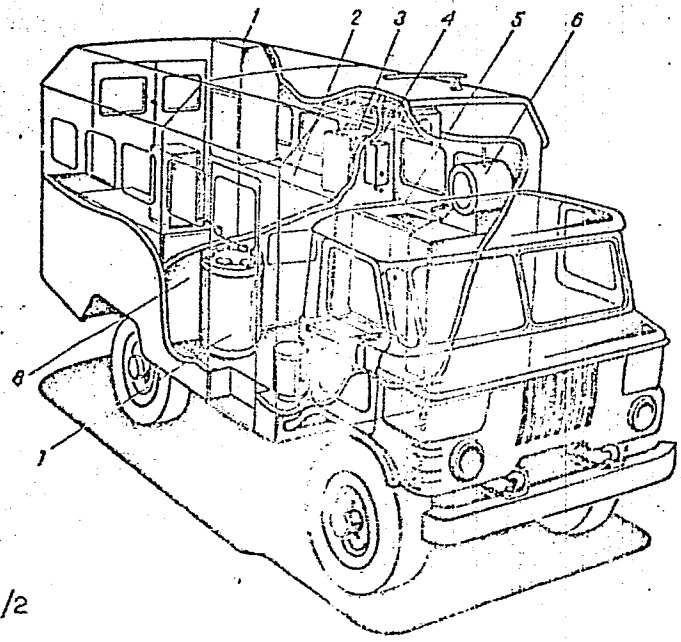
"A Motorized Sanitary-Bacteriological Laboratory"

Moscow, Meditsinskaya Tekhnika, No 1, 1972, pp 55-56

Abstract: The laboratory is a vehicular body set on an automobile chassis. It has an independent power supply, heating system, exhaust fans, and artificial light. It is partitioned into a sterilization materials-procurement section and a laboratory proper with an assortment of equipment. A schematic diagram shows a vent hood, laboratory table, thermostat, electric water heater, wash stand, desiccator, electric steam sterilizer, and partition with a sliding door. The laboratory personnel consist of 5 persons: physician, 2 laboratory technicians, orderly, and driver-mechanic. The mobile laboratory can do the following (a) make epidemiological surveys; (b) check on communal hygiene, industrial hygiene, food establishments; (c) obtain and deliver material to hospital laboratories for further study; (d) obtain primary cultures and perform fluorescence analyses of the material.

USSR

SOROKIN, V. P., Meditsinskaya Tekhnika, No 1, 1972, pp 55-56



Motorized Sanitary-bacteriological Laboratory

1 - vent hood; 2 - laboratory table; 3 - thermostat; 4 - electric water heater; 5 - wash stand; 6 - desiccator; 7 - electric steam sterilizer; 8 - partition with a sliding door.

2/2

USSR

UDC 628.165.04:628.31

TKACH, V. I., FILIPPOV, S. N., and SOROKIN, V. S.

"Distillation Desalination Units for Purification of Sewage From Some Industries"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 7, 1973, pp 17-21

Abstract: The problems involved in purification of sewage with high salt content are discussed including the aspects of their dumping into the general water works, recycling, etc. Purification units have been designed based on evaporation of sewage. Technical diagrams for the apparatus used in thermal purification are reported. None of them are in use as yet. Some are being built at present time, some are still on the drawing boards.

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1/2 047 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--DOPING OF GALLIUM PHOSPHIDE CRYSTALS DURING VERTICAL CRUCIBLELESS ZONE MELTING -U-

AUTHOR-(03)-ILIN, YU.L., SOROKIN, V.S., YASKOV, D.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 447-51

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--CRYSTAL IMPURITY, SINGLE CRYSTAL, CRYSTALLIZATION, VAPORIZATION, REACTION KINETICS, ZINC, TELLURIUM, METAL COATING, ZONE MELTING, GALLIUM ARSENIDE, PHOSPHIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1900 STEP NO--UR/0363/70/006/003/0447/0451

CIRC ACCESSION NO--AP0115719

UNCLASSIFIED

2/2 047 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115719

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. A TECHNIQUE WAS WORKED OUT FOR DOPING GAAS FROM THE GAS PHASE, MAKING IT POSSIBLE TO GROW SINGLE CRYSTALS WITH A UNIFORM BULK DISTRIBUTION OF THE DOPING IMPURITIES. THE POSSIBILITY IS SHOWN OF CONTROLLING THE CRYSTALS BY IMPURITY COMPN. WITHIN RATHER LARGE LIMITS BY CHANGING THE PARTIAL VAPOR PRESSURE OF THE DOPING ELEMENT IN THE WORKING VOL. THE DISTRIBUTION COEFFS. FOR ZN AND TE WERE FOUND EXPTL., AS WELL AS THE KINETIC VAPORIZATION COEFF. OF ZN CORRESPONDING TO THE STOICHIOMETRIC GAP MELT. FACILITY: LENINGRAD. ELEKTROTEKH. INST. IM. UL'YANOVA. LENINA, LENINGRAD, USSR.

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0132128

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY OF MEOD, CD SUB 3 OH, MECD SUB 2 OH AND CD SUB 3 CH SUB 2 OH WAS MADE IN TERMS OF MASS SPECTRA AND REACTIONS POSSIBLE IN MEOH AND ETOH AT NORMAL TEMP. AS FOLLOWED BY A CHEM. MASS SPECTROMETER USING IONIZING PHOTONS WITH FIRST IONIZATION POTENTIALS UP TO 13 EV. THE DISTRIBUTION OF PRODUCTS AND PRODUCT FRAGMENTS WAS TABULATED; THE MOST PROBABLE ARE REACTIONS OF TRANSFER OF H FROM HO SO AS TO FORM MEOD SUB 2 PRIME PLUS FROM MEOD OR OF MECD SUB 2 OH SUBPRIME PLUS FROM MECD SUB 2 OH AND THE CORRESPONDING ALKOXY ION RADICALS SUCH AS MEO AND MECD SUB 2 O; THESE RATES ARE IN COMPARISON WITH THE LESSER RATES FROM FORMATION OF DEUTERATED IONS AND RADICALS SUCH AS CH SUB 2 OD FROM MEOD AND OR MECDOH FROM MECD SUB 2 OH, ALTHOUGH THE LATTER REACTIONS ARE ACTUALLY MORE ADVANTAGEOUS ENERGETICALLY BY SOME 0.5 EV. IN ETOH THERE WAS ALSO OBSD. THE FORMATION OF DEUTERATED CH SUB 2 CD SUB 2 OH IONS AND RADICALS, WHICH PROCEEDS DESPITE EVEN LOWER PROBABILITY RELATIVE TO THE PROCESSES CITED ABOVE. EVIDENTLY IN IONIC MOL. REACTIONS IN ALCS. THE PROGRESS ALONG DEFINITE ROUTES IS DETD. BY SPECIFICITY OF THE REACTION OF POS. IONS WITH AN INDUCED MOL. DIPOLE TYPICAL OF POLAR MOLS. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.382.11:621.382.345.029.62

NIKOLAYEVSKIY, I. F., POLEVOY, V. V., SOROKIN, Ye. P.

"On the Parameters of a Substitution Circuit for Microwave Power Transistors at High Injection Levels"

Moscow, Poluprovodnikovyye Pribory i ikh Primeneniye, No 24, Izd-vo "Sovetskoye Radio", 1970, pp 42-51

Abstract: The authors consider a simplified physical equivalent circuit for a high-frequency drift-type power transistor in a common-emitter connection. The parameters of the circuit are found by measuring the absolute values of the input impedance, current gain, slope of the transfer characteristic, time constant of the collector circuit, output impedance of the transistor and capacitance of the collector circuit, and the frequency dependences of these quantities. It is pointed out that the inductances of the base, emitter and collector circuits and parasitic reactive elements of the measurement circuits have an appreciable effect on determination of the low-signal parameters of planar power transistors at high injection levels. Eight figures, bibliography of two titles.

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USSR

UDC 621.382.3

NIKOLAYEVSKIY, I.F., POLEVOY, V.V., SORCKIN, YE.P.

"On The Parameters Of The Equivalent Circuits Of Microwave Power Transistors With High Injection Levels"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp 42-51 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B238)

[No abstract]

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--RECORDING OF TRACKS OF IONIZING PARTICLES ON CELLULOSE FILMS IN VARIOUS GASEOUS MEDIA -U-

AUTHOR-(04)-PRIVALOVA, V.E., KARTUZHANSKIY, A.L., SOROKIN, YE.S., FEDYUKIN, V.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. NAUCH. PRIKL. FOTOGR. KINEMATOGR. 1970, 15(1), 59-61

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS

TOPIC TAGS--RECORDING EQUIPMENT, ION EMISSION, PARTICLE TRACK PHOTOGRAPHY, PHOTOGRAPHIC FILM, CELLULOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/0309 STEP NO--UR/0077/70/015/001/0059/0061

CIRC ACCESSION NO--AP0053294

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRACKS OF PRIME210 PO ALPHA PARTICLES (ENERGY 5 MEV) WERE RECORDED ON NITROCELLULOSE (I) AND CELLULOSE ACETATE (II) FILMS EXPOSED TO O, CO SUB2, OR H SUB2 O .IPORS. I FILMS WERE ETCHED WITH A 20PERCENT NAOH SOLN., WHEREAS II FILMS WERE ETCHED WITH A NAOH-KOH-KMNO SU84 MIXT. AT 50DEGREES. MEASUREMENT RESULTS INDICATED THAT WIDEST TRACKS WERE OBTAINED IN O, I.E., O INITIATED INTENSIVE DEGRADATION OF I AND II FILMS, EVEN AT A PARTIAL PRESSURE OF ONLY TWICE THAT FOUND IN AIR. THE TRACKS WERE MARKEDLY SMALLER IN VACUO.

UNCLASSIFIED

USSR

UDC 547.1'13

YERMOLAYEV, V. I., SOROKIN, YU. A., GLADYSHEV, YE. N., VYAZANKIN, N. S., and RAZUVAYEV, G. A., Institute of Chemistry, Academy of Sciences USSR

"Triethyl(triphenylphosphine- π-cyclopentadienylnickel)germane"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, p 1878

Abstract: Previously unknown triethyl(triphenylphosphine- π-cyclopentadienylnickel)germane was synthesized by the authors by two new methods: 1. An equimolar mixture of π-C_5H_5 $(C_6H_5)_3P$ NiCl and bis(triethylgermyl)-mercury is allowed to stand in 25 ml benzene for one hour at ~20°. After separation of the mercury the solvent is boiled down under vacuum. The residue is crystallized twice from hexane at -75°. 2. The same compound is obtained by adding 7.7 g bis(triethylgermyl)-mercury to a solution of 2.9 g nickelocene and 3.9 g triphenylphosphine in 50 ml benzene (molar ratio of reactants 1:1:1) and heating the mixture to 40° (70 hours). The mercury is separated from the mixture and the product isolated, as above.

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SOROKIN, Yu. M.

JPRS 60533

14 November 1973

COMPLEX EFFECTS OF RADIATION FOR MOVING SOURCES IN PLASMA

[Article by Yu. M. Sorokin, of Gorkiy State University, Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Russian, Vol 16, No 3, March 1973, pp 342-350]

Investigations were conducted of the angular and frequency spectra of the radiation of sources uniformly moving in isotropic plasma. The aberrational nature of complex effects of the radiation was made clear. It was shown that in a certain frequency band the radiation of a monochromatic source isotropic in the accompanying system K' has a limited angular spectrum in the system K connected with the medium, whereas for emitters beam-directed in K', with a finite band, the radiation pattern can be substantially widened for an observer in the system K. Special features of the time structure of received signals were examined. It was found, in particular, that in some cases the radiation of a source isotropic in K', continuously emitting from the moment t'_0 in K', arrives at a fixed point of the system K only in the course of a finite time. The possibilities of observing the effects under consideration are discussed.

1. The study of moving sources in dispersing media has certain distinctive features, the investigation of which not only is interesting in principle but also is now finding a number of applications, in particular for the investigation of properties of the ionosphere [1], and also in high-energy physics [2]. As early as in [3, 4] the possibility was pointed out of the the existence of so-called complex effects of radiation for sources moving in a medium with dispersion, including

USSR UDC 620.193.5

SOROKIN, YU. I., TSEYTLIN, KH. L., VALASHOVA, A. A., BABITSKAYA, S. M., LEVIN, YA. S., Scientific-Research Institute of Organic Semi-Products and Dyes

"Influence of Water Vapor and Its Mixtures With Carbon Dioxide on Corrosion of Metals in Ammonia at 500°"

Moscow, Zashchita Metallov, No 4, 1972, pp 430-434

Abstract: It was shown earlier that the catalytic action of metals on dissociation of ammonia and their corrosion resistance are interrelated. It was therefore of interest to determine the influence of water vapor and its mixtures with CO_2 on the resistance of metals to a stream of gaseous ammonia. The addition of water vapor has little influence on corrosion losses of carbon steel, but its mechanical properties change significantly, specimens breaking at bending angles of 30° after 400 hours (as opposed to 90° in pure ammonia). Water vapor sharply reduces the corrosion of stainless steel. The strength properties of the steel change little. The addition of carbon dioxide with water vapor sharply increases total corrosion of carbon steel. The strength properties change slightly, but cracks appear at bending angles of 90°.

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USSR

SOROKIN, Yu. I., Institute of Biology of Inland Waters, Academy of Sciences USSR, Borok, Yaroslavskaya Oblast

"Quantitative Evaluation of the Effect of Bacterio-Plankton on the Organic Cycle in Tropical Ocean Waters"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 4, Aug 70, pp 923-925

Abstract: The biosynthesis of bacteria was studied in the tropical waters of the western part of the Pacific Ocean. The production of bacterio-plankton from the bacterial biomass was calculated from heterotrophic CO_2 assimilation, which was monitored by the radiocarbon tracer method. The fundamental energy source for the biosynthesis of bacterio-plankton is dissolved organic matter and not suspended microplankton material, as shown by data obtained by sample filtration through a membrane filter. The cold waters of the ocean contain more than 95% of the over-all reserve in dissolved organic matter, the bacterial utilization of which is decelerated by low temperature. The thin layer of tropical waters of the ocean in which bacterial destruction takes place at an optimum rate amounts to only 1% of the ocean volume.

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DETERMINATION OF THE ACTIVITY OF HETEROTROPHIC MICROFLORA IN THE OCEAN BY MEANS OF C PRIME14 LABELED ORGANIC SUBSTANCE -U-

AUTHOR--SOROKIN, YU.I.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 149-156

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEA WATER, BACTERIOLOGY, CARBON ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0441 STEP NO--UR/0220/70/039/001/0149/0156

CIRC ACCESSION NO--AP0117677

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPARATIVE ACTIVITY OF NATURAL MICROFLORA POPULATIONS BOTH IN WATER AND BOTTOM SEDIMENTS WAS EVALUATED BY MEANS OF C PRIME14 LABELED SOLUBLE ORGANIC SUBSTANCE (ALGAL HYDROLYSATE). THE INTENSITY OF C PRIME14 UTILIZATION BY BACTERIA IN A SHORT TERM EXPERIMENT WAS USED AS A CRITERION OF MICROFLORA ACTIVITY. THE RELATIONSHIP WAS ESTABLISHED BETWEEN THE INTENSITY AND EFFECTIVENESS OF UTILIZATION OF LABELED ORGANIC SUBSTANCE BY MICROFLORA IN SEA WATER AND ITS INITIAL CONCENTRATION. THE MAXIMAL EFFECTIVENESS OF UTILIZATION OF SOLUBLE ORGANIC SUBSTANCE BY WATER MICROFLORA FOR BIOSYNTHESIS WAS 45PERCENT, REMAINING SUFFICIENTLY HIGH EVEN WHEN THE INITIAL CONCENTRATION OF ADDED LABELED HYDROLYSATE WAS 1-2 MCG. BACTERIAL DESTRUCTION OF ORGANIC MATTER IN THE OCEAN SEEMS TO BE LIMITED TO UPPER WATER LAYERS DOWN TO DEPTH OF 600-800 M WITH THE MAXIMUM AT 400-600 M IN THE TROPICAL ZONE. HETEROTROPHIC MICROFLORA OF DEEP WATERS IN THE OPEN OCEAN IS NOT NUMEROUS AND HAS LOW ACTIVITY.

UNCLASSIFIED

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UDC: 620.193.5

TSEYTLIN, Kh. L., SOROKIN, Yu. I., BALASHOVA, A. A., BABITSKAYA, S. M., LEVIN, Ya. S., KONYUSHENKO, A. T., GOLDAKER, R. V., and LADYZHINSKIY, B. S., Scientific Research Institute of Organic Intermediates and Dyestuffs

"High-Temperature Corrosion of Metals in Gaseous Ammonia"

Moscow, Zashchita Metallov, Vol. 6, no. 4, 70, pp 451-454

Abstract: Processes involving the use of ammonia are known to cause corrosion of equipment. The homogeneous reaction of ammonia dissociation in the gas phase begins above 1200--1300°C. In the presence of a catalyst this temperature drops to 300--400°C. Experiments have shown that the type of metal considerably affects the thermal dissociation of ammonia and that this effect is a function of temperature. This study describes in detail the testing and effects of gaseous ammonia on KhN10T steel, KhN78T, N70M27F, and Kh15N55M16V alloys, VT-1 titanium, and MZS copper. The analysis of experimental data shows that there is a fundamental correspondence between the effect of metals on ammonia dissociation and their resistance. Therefore, to insure continuous service of equipment in gaseous ammonia, it is advisable to use materials which

USSR

TSEYTLIN, Kh. L., et al, Zashchita Metallov, Vol 6, no. 4, 70, pp 451-454

will not readily catalyze ammonia dissociation. Materials which are suitable for service under these conditions include carbon steel and N70M27F, Kh15N5S16V alloys up 400°C; Kh18N10T steel and nickel up to 300°C; KhN78T up to 600°C; aluminum, titanium, and copper up to 450°C. Considering the low specific gravity, good technological properties, relative availability, and low cost of aluminum, this metal is preferred in selecting materials for equipment operated in gaseous ammonia at high temperatures. A table illustrating the performance of the above metals during 400 hours of testing with gaseous ammonia at high temperatures, including corrosion rate tensile strength, relative elongation, % and Vickers hardness, prior to and after the experiment, is given in the original article.

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USSR

SOROKIN, Yu. I.; Institute of the Biology of Inland Waters, Academy of Sciences USSR, Borok, Yaroslavl' Oblast' (Presented by Academician A. I. Oparin)

"The Aggregation State of Marine Bacterioplankton"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 905-907

Abstract: In many marine pelagic regions, the amount of phytoplankton is insufficient to satisfy the nutritional needs of the zooplankton that feeds on plant material. Aggregation of organic material that is dissolved in sea water and is present in an amount 20 times larger than that of suspended organic matter may take place. Biosynthesis by bacterioplankton is the most probable way of aggregation. The degree of aggregation of organic matter in the form of bacterioplankton was studied experimentally by labeling natural bacterioplankton with C^{14} and filtering it through filters with a varying pore size. Results of determinations at a marine station south of the Gilbert Islands (4° S) showed that 1/3-1/2 of all cells of bacterial plankton were larger than 4 microns. This ratio did not change significantly with increasing depth, although the number of bacteria in deep waters decreased greatly. Measurements carried out at distances up to 20 km from the Great Australian Barrier Reef in the direction

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203120014-6"

USSR

SOROKIN, Yu. I., Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 905-907

of the open sea indicated that the absolute content of bacterial aggregates increased greatly towards the reef, while the ratio of microflora in their biomass decreased. Studies conducted by labeling with C^{14}) of the formation of bacterial aggregates in sea water showed that aggregates formed in the course of bacterial growth 10-15 hr after introduction of C^{14}. The presence of suspended particles was not necessary; aggregates formed both in unfiltered sea water and sea water that had been passed through a filter which retained suspended particles and 90 percent of the total microflora. The aggregates were large enough to be 15 percent retained on filters with pores large enough to let even a part of the small-sized phytoplankton pass through. Experiments on feeding of invertebrates with bacterioplankton labeled with C^{14} showed that aggregates of this size were utilized intensively even by coarse filtrators of the Calanoida or Eufauziida type. Results showed that aggregates of bacterial cells must play an important role as food for filtering invertebrates.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/3 012

TITLE--NUMBER OF PRODUCTION OF BACTERIA IN THE WATERS AND BOTTOM SEDIMENTS OF THE CENTRAL PART OF THE PACIFIC OCEAN -U-

AUTHOR--SOROKIN, YU.I.

COUNTRY OF INFO--USSR, PACIFIC OCEAN

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 192, NO 3, 1970, PP 655-658

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, BIOLOGICAL AND MEDICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BACTERIA, BOTTOM SEDIMENT, OCEAN BOTTOM SAMPLING/(U)VITYAZ OCEANOGRAPHIC SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0020/70/192/003/0655/0658

PROXY REEL/FRAME--3005/1199

CIRC ACCESSION NO--AT0133201

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/3 012

CIRC ACCESSION NO--AT0133201

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NUMBER AND PRODUCTION OF BACTERIA IN THE WATERS AND BOTTOM MATERIALS WERE INVESTIGATED AT A LARGE NUMBER OF STATIONS SITUATED IN OLIGOTROPIC TROPICAL WATERS IN THE CENTRAL PART OF THE PACIFIC OCEAN DURING THE 43D GEOLOGICAL EXPEDITION OF THE RESEARCH VESSEL "VITYAZ'". IN DEEP WATERS THE NUMBER OF BACTERIA AND THEIR ACTIVITY ARE INSIGNIFICANTLY SMALL. A DETAILED VERTICAL ANALYSIS INDICATED THAT IN REGIONS OF SUBSIDENCE OF WARM SURFACE WATERS THERE ARE TWO MAXIMA IN THE NUMBER AND ACTIVITY OF BACTERIA: IN THE PHOTOSYNTHESIS ZONE AND IN THE LAYER 300-500 M WHERE WARM AND COLD WATERS MEET. ITS APPEARANCE HERE CAN BE ATTRIBUTED TO THE CONCENTRATION OF DEAD REMAINS OF ORGANISMS WHOSE SINKING TO THE BOTTOM IS INHIBITED BY THE PRESENCE OF DENSIDY GRADIENTS. BACTERIAL ACTIVITY IN THIS LAYER MUST BE ACCOMPANIED BY AN INTENSIVE CONSUMPTION OF OXYGEN FROM THE WATER. IT CAN BE POSTULATED THAT THE ACTIVITY OF MICROFLORA IN THE INTERMEDIATE LAYER OF THE THERMOCLINE CAN BE ONE OF THE MOST IMPORTANT CAUSES OF THE APPEARANCE AND STABLE EXISTENCE OF AN OXYGEN MINIMUM IN THE OCEAN. AT STATIONS NEAR THE EQUATOR, WHERE COLD WATER ARE SITUATED CLOSER TO THE SURFACE, A SECOND ACTIVITY MAXIMUM FOR BACTERIA IS EITHER TOTALLY ABSENT OR IS SITUATED CLOSER TO THE SURFACE AT DEPTHS OF 150-250 M. IN THE SURFACE LAYERS THE PRODUCTION OF BACTERIA IS 20-100 MG-M PRIME3 OF BIOMASS PER DAY. IN THE DEEP WATER IT IS REDUCED TO 0.2-1 MG-M PRIME3 PER DAY. THE TOTAL BIOMASS OF BACTERIA IS CLOSE TO THESE SAME FIGURES. RELATIVELY INTENSE BACTERIAL ACTIVITY IS OBSERVED ONLY IN BOTTOM MATERIAL NEAR ISLANDS AND IN THE ZONE OF EQUATORIAL ENRICHMENT.

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UNCLASSIFIED PROCESSING DATE--20NOV70

3/3 012

CIRC ACCESSION NO--AT0133201

ABSTRACT/EXTRACT--IN RED CLAYS OF THE CENTRAL BASINS, RECEIVING AN INSIGNIFICANT AMOUNT OF ASSIMILABLE ORGANIZ MATTER, THE MICROFLORA IS EXTREMELY POOR AND ITS PRODUCTION IS INSIGNIFICANT. THE FORMATION OF FERROMANGNAESE NODULES ON THE OCEAN FLOOR IS ASSOCIATED PRECISELY WITH THESE REGIONS. FACILITY: INSTITUTE OF BIOLOGY ON INLAND WATERS.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--PHOTOPROTONS FROM THE BORON 11 NUCLEUS -U-

AUTHOR-(04)-SOROKIN, YU.I., SHARDANOV, A.KH., SHEVCHENKO, V.G., YUREV, B.A.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(1), 8-18

DATE PUBLISHED--------70

S

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTONUCLEAR REACTION, PROTON SCATTERING, BORON ISOTOPE, BREMSSTRAHLUNG, ANGULAR DISTRIBUTION, PROTON SPECTRUM, EXCITATION CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0176 STEP NO--UR/0367/70/011/001/0008/0018

CIRC ACCESSION NO--AP0048468

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203120014-6"

2/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0048468

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY DISTRIBUTIONS OF PHOTO P EMITTED FROM PRIME11 B NUCLEI, EXPOSED TO THE 16.5- AND 18.5-MEV BREMSSTRAHLUNG AND THE PHOTO P ANGULAR DISTRIBUTION AT 18.5 MEV WERE MEASURED. THE P WERE REGISTERED IN NUCLEAR PHOTOPLATES. IN THE PHOTO P SPECTRA A GREAT NO. OF MAX. WAS OBSD. THAT WERE DUE TO THE EXCITATION OF LEVELS OF THE PRIME11 B NUCLEUS IN THE ENERGY REGION 12-18.5 MEV. THE CROSS SECTIONS WERE OBTAINED FOR THE REACTION PRIME11 B(GAMMA, P) PRIME10 BE WITH THE FINAL PRIME10 BE NUCLEUS IN THE GROUND STATE AND IN THE 1ST EXCITED STATE. THE RADIATION WIDTHS OF THE OBSD. LEVELS OF PRIME11 B WERE ESTD. THE ANAL. OF THE RESULTS ENABLES ONE TO DEDUCE INFORMATION CONCERNING THE MULTIPOLARITIES OF THE GAMMA TRANSITIONS AS WELL AS SPINS AND PARITIES OF THE EXCITED STATES OF THE PRIME11 B NUCLEUS. FACILITY: INST. YAD. FIZ., MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--QUANTITATIVE ESTIMATE OF MARINE BACTERIOPLANKTON AS A SOURCE OF FOOD -U-

AUTHOR-(03)-SOROKIN, YU.I., PETIPA, T.S., PAVLOVA, YE.V.

COUNTRY OF INFO--USSR

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 2, PP 332-340

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIA, FOOD, PLANKTON, OCEAN, PHYTOPLANKTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1277 STEP NO--UR/0213/70/010/002/0332/0340

CIRC ACCESSION NO--AP0109361

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109361

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADIOCARBON METHOD WAS USED TO EVALUATE THE ROLE OF BACTERIA AS A SOURCE OF FOOD FOR THE MASS FORMS OF PLANKTONIC ANIMALS FROM THE BLACK SEA AND THE TROPICAL PACIFIC. THE NATURAL BACTERIOPLANKTON WHOSE 30 TO 40PERCENT ARE FORMED BY AGGREGATE BACTERIAL CELLS WAS FOUND TO BE CONSUMED AS INTENSIVELY AS PHYTOPLANKTON BY THIN AND ROUGH FILTRATORS AND TO A LESSER DEGREE BY CAPTURING CARNIVORES. OPTIMUM CONCENTRATIONS OF THE NATURAL BACTERIOPLANKTON AT WHICH IT IS INTENSIVELY CONSUMED BY FILTRATORS ARE 0.3 TO 0.7 G-M PRIME3. SIMILAR CONCENTRATIONS WERE FOUND IN THE GRADIENT LAYERS OF THE OLIGOTROPHIC WATERS OF THE OCEAN WHERE ZOOPLANKTON IS CONCENTRATED.

FACILITY: INSTITUT BIOLOGII VNUTRENNIKH VOD AN SSSR.

FACILITY: INSTITUT BIOLOGII YUZHNYKH MOREY AN USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ON THE MECHANISM OF CHEMICAL AND BIOLOGICAL OXIDATION OF SODIUM, CALCIUM AND IRON SULPHIDES -U-

AUTHOR--SOROKIN, YU.I.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 253-258

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL REACTION MECHANISM, CALCIUM SULFIDE, SODIUM SULFIDE, IRON SULFIDE, BIOLOGIC OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0005 STEP NO--UR/0220/70/039/002/0253/0258

CIRC ACCESSION NO--AP0054805

UNCLASSIFIED

009

UNCLASSIFIED

CIRC ACCESSION NO--AP0054805 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXIDATION OF NA AND CA SULPHIDES AT THEIR LOW CONCENTRATIONS WAS SHOWN TO BE MAINLY PURELY CHEMICAL PROCESS PRODUCING SULPHATE AND THIOSULPHATE BOTH IN THE STERILE MEDIUM AND IN THE PRESENCE OF THIONIC BACTERIA. THIS WAS THE FIRST STAGE, AND THE SECOND ONE CONSISTED IN OXIDATION OF THIOSULPHATE BY THE BACTERIA. MOLECULAR SULPHUR WAS PRODUCED IN THE CULTURES OF THIONIC BACTERIA (THIOBACILLUS THIOOXIDANS) AS A RESULT OF CHEMICAL INTERACTION OF THE INTERMEDIATE PRODUCTS OF BACTERIAL THIOSULPHATE OXIDATION (OF TETRATHIONATE TYPE). TETRATHIONATE INTRODUCTION INTO THE STERILE MEDIUM, CONTAINING NA AND CA SULPHIDES, RESULTED IN THE PRODUCTION OF MOLECULAR SULPHUR. IRON SULPHIDE WAS EASILY OXIDIZED CHEMICALLY TO MOLECULAR SULPHUR.

UNCLASSIFIED

USSR

UDC: 621.317

SOROKIN, Yu. K., KHOVRATOVICH, V. S.

"Measuring the Basic Parameters of SHF Lines of Arbitrary Cross Section"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 58-61 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A366)

Translation: The authors discuss problems of modeling SHF lines in an electrolytic bath. Specially designed electrodes are used to eliminate the effect of the meniscus. A calculated example is given to verify the proposed method. The results of control measurements show that this procedure gives an appreciable improvement in modeling precision, and can be used to determine the basic parameters of transmission lines with TEM waves within 1-2 percent. Bibliography of six titles. E. L.

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USSR

STEPANOV, N. S., SOFOKIN, YU. M., Gor'kiy State University imeni N. I. Lobachevskiy

UDC 533.95

"Kinetic Theory of Reflection of Electromagnetic Waves from a Moving Inhomogeneous Plasma Layer"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 578-583

Abstract: A study was made of the reflection of electromagnetic waves from a layer of equilibrium plasma uniformly moving in a dielectric medium. The solution of the indicated problem can be expressed in terms of the solution for an auxiliary stationary plasma layer in a stationary dielectric and having a Maxwell distribution function. Expressions are presented for the coefficients of reflection and penetration of the waves through the layer. An expression uniquely relating the total energy and frequencies of the incident, reflected and transmitted signals was obtained for a weakly relativistic plasma. For moving boundaries it is not the coefficients of reflection and penetration of the waves with respect to power but the variation of the total energy of the corresponding signals considering the transformation of their duration which is more indicative. Relations are also obtained which permit the energy characteristics of the wave packet to be found for a cold plasma if their frequency characteristics are known.

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USSR

UDC 619:615.371:616.988.73

SOROKINA, A. A., Kursk Biologicals Plant

"Cultural Properties of Newcastle Disease Virus Vaccine"

Moscow, Veterinariya, No 10, 1971, pp 46-48

Abstract: The cultural properties of the vaccinal B_1 strain of Newcastle disease virus are related to its mode of adaptation to cell cultures (successive passages in a culture of chick embryo cells or alternating passages in cell cultures and chick embryos). Alternating passages in cell culture and chick embryos yielded a variant of the virus that possessed good immunizing properties, reproduced rapidly, and exhibited marked cytopathic effect (destruction of the monolayer within 24 hours). These properties of the strain stabilized by the 20th passage and persisted during the next 30 passages (the observation period).

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USSR

UDC 576.311

DEBORIN, G. A., EL'PINER, I. Ye. (Deceased), BARANOVA, V. Z., SOROKINA, A. D., and TONGUR, A. M., Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, and Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"The Reaction of Tobacco Mosaic Virus With Phospholipid Monolayers Exposed to Ultrasound"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 6, Jun 71, pp 1,445-1,448

Abstract: Curves showing the expansion and compression of a monolayer of pure phospholipids (obtained from cattle brain) and of a monolayer of phospholipids with tobacco mosaic virus coincided in shape and values of maximum pressures, suggesting that the virus did not penetrate into the surface film of the phospholipids. On the other hand, curves showing the compressibility of sonicated phospholipids and sonicated phospholipids with tobacco mosaic virus diverged considerably, indicating that the layer of phospholipids was penetrated by the virus. In other words, a monolayer of sonicated phospholipid is capable of incorporating virus particles to form a mixed phospholipid -- virus film. Thus, a change in the condition or structure of a biological membrane (or its individual constituents) can influence its

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USSR

UDC 541.28

SKOVORODKIN, N. V., SOROKINA, A. V., BUGORKOV, S. S., KRIVOKHATSKIY, A. S., and PETRZHAK, K. A.

"Radiochemical Determination of the Yields of Rare Earth Elements in the Fission of ^{239}Pu and ^{241}Pu by Slow Neutrons. I. Yields of Rare Earth Elements with Half-lives of Less Than 10 Days"

Leningrad, Radiokhimiya 12, No 3, 1970, pp 487-492

Abstract: ^{239}Pu and ^{241}Pu were purified with Dowex-1x8 (200-400 mesh) anion-exchange resin and used as targets. All cumulative yields are expressed in terms of the ^{144}Ce cumulative yields. Yields are reported for the following rare earth isotopes: ^{141}La, ^{143}Ce, ^{145}Pr, ^{149}Nd, ^{149}Pm, ^{151}Pm, ^{153}Sm, ^{156}Sm, ^{157}Eu, ^{159}Gd, and ^{161}Tb.

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1/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--ON THE IMPOSSIBILITY OF CRYSTALLINE ORDERING IN ONE AND TWO DIMENSIONAL CLASSICAL SYSTEMS -U-

AUTHOR--SORCKINA, E.M.

5

COUNTRY OF INFO--USSR

SOURCE--INDIAN J. PURE APPL. PHYS., VOL. 8, NO. 2, P. 64-5 (FEB. 1970)

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FACILITY: ACAD. SCI., MOSCOW, USSR.

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AUTHOR-(02)-SADOVNIKOV, B.I., SUROKINA, E.M.

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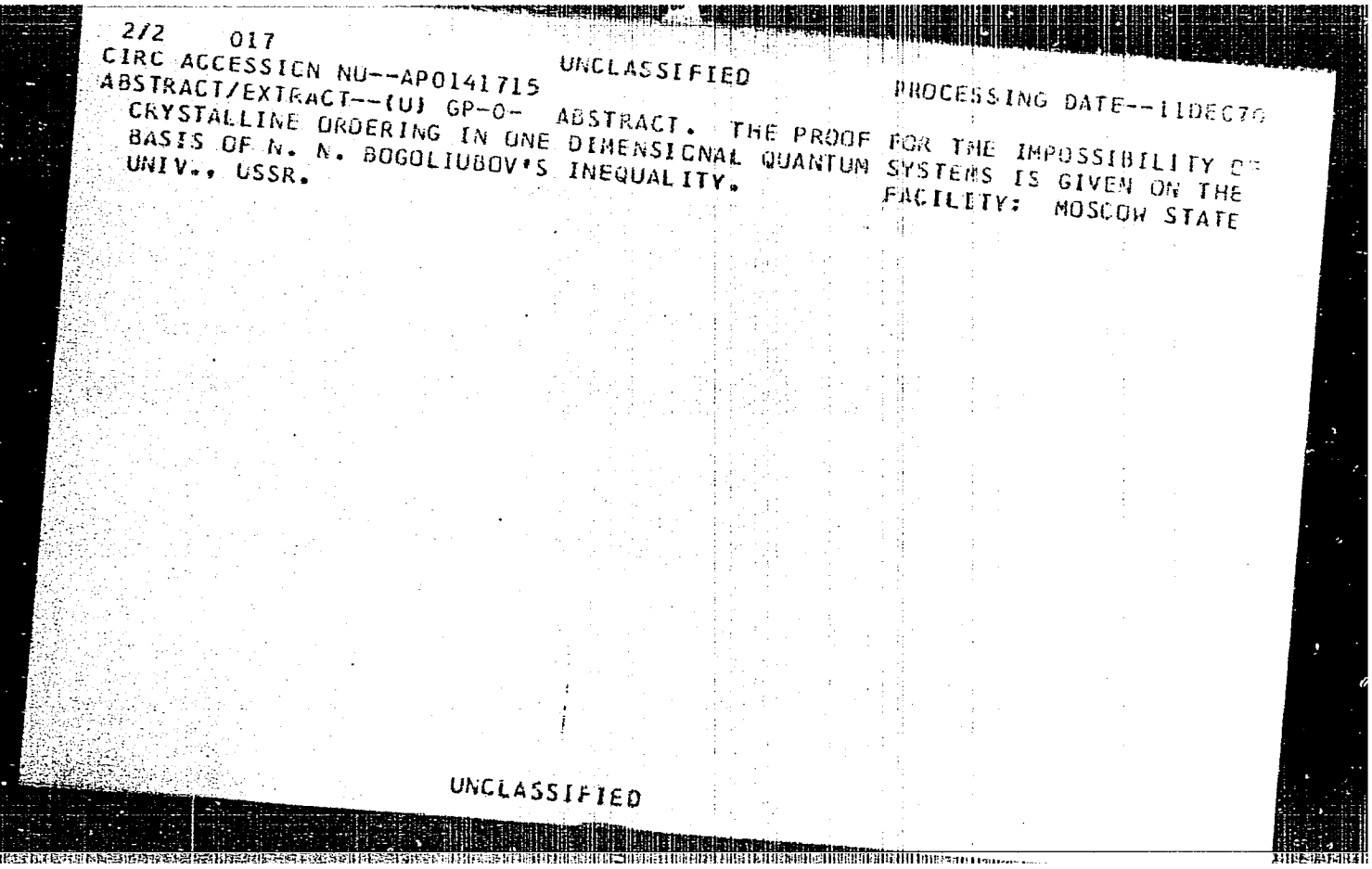

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CIRC ACCESSION NU--AP0141715
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROOF FOR THE IMPOSSIBILITY OF
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BASIS OF N. N. BOGOLIUBOV'S INEQUALITY.
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KONOVALOVA, N. YE., SUZDAL'SKAYA, N. V., ZHEMCHUZHINA, A. I., SOROKINA, G. K., and SHCHEKOTKOVA, T. V.

"Dynamics of the Race Composition of Agents of Grain Rust in the USSR"

Leningrad, Mikologiya i Fitopatologiya, Vol 4, No 2, 1970, pp 107-122

Abstract: The distribution of brown, yellow, and stem rust of wheat, in hundreds of varieties, and two types of pervarive oat rust throughout the USSR are described, with varying ecological conditions influencing the formation of new types and/or the persistence of the old. A highly virulent rust from the Far East, responsible for destruction of 80% of the crop, had lost its virulence on the West side of the Urals. Mutation depends on many factors, none of which is of similar value in all types. Where the organism passes through an intermediate host, the appearance of new types of very likely: this is rare in asexual stages.

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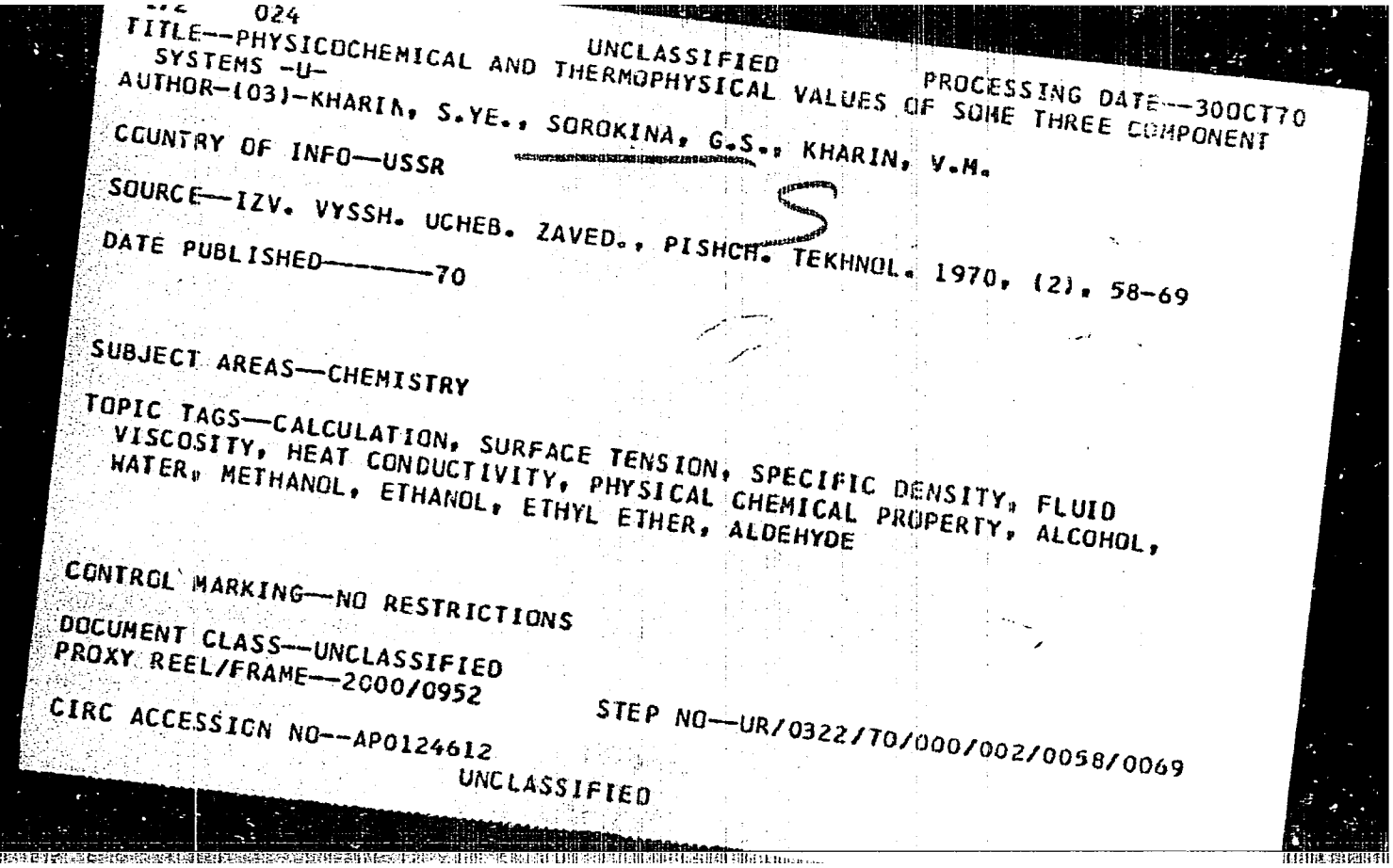

024 UNCLASSIFIED

TITLE--PHYSICOCHEMICAL AND THERMOPHYSICAL VALUES OF SOME THREE COMPONENT SYSTEMS -U-

PROCESSING DATE--30OCT70

AUTHOR-(03)-KHARIN, S.YE., SOROKINA, G.S., KHARIN, V.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (2), 58-69

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CALCULATION, SURFACE TENSION, SPECIFIC DENSITY, FLUID VISCOSITY, HEAT CONDUCTIVITY, PHYSICAL CHEMICAL PROPERTY, ALCOHOL, WATER, METHANOL, ETHANOL, ETHYL ETHER, ALDEHYDE

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUATIONS ARE GIVEN FOR CALCG. D., REFRACTION, VISCOSITY, SURFACE TENSION, AND HEAT COND. OF SYSTEMS H SUB2 O-ETOH-X, WHERE X IS MEOH, PROH, ME SUB2 CHOH, BUOH, ME SUB2 CHCH SUB2 OH, ME SUB2 CH(CH SUB2) SUB2 OH, ACOME, ACOET, ACOPR, ACO(CH SUB2) SUB2 CHME SUB2, ET SUB2 O, ACH, MECH:CHCHO, ETCHO, OR PRCHO. EMPIRICAL COEFFS. OF THE EQUATIONS ARE TABULATED. AV. DIFFERENCES OF CALCD. AND EXPTL. VALUES OF THE PHYS. CHARACTERISTICS DO NOT EXCEED 0.1-0.2PERCENT, MINUS, 5-7PERCENT, MINUS, AND 8PERCENT, RESP. FACILITY: VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

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Analysis and Testing

USSR

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LASHKO, N. F., SASLAVSKAYA, L. V., KOZLOVA, M. N., MOROZOVA, G. I., SOROKINA, K. P., KHAKHLOVA, N. V., and YAKOVLEVA, YE. F.

"Physical and Chemical Methods of Phase Analysis of Steels and Alloys"

Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov (English version above), Moscow, Metallurgiya Press, 1970, 476 pages

Translation of Annotation: Methods of combined physical and chemical phase analysis are systematized and summarized, including methods of phase separation and their chemical and x-ray structural analysis.

Problems of the theory of electrochemical separation of phases, the principles of selection of electrolytes, and methods of phase analysis are analyzed as applicable to various steels and alloys.

The book is designed for scientific workers of scientific research institutes and plant laboratories involved in the development of steels and alloys, as well as the study of their properties depending on their phase composition.

99 figs, 100 tables, 708 biblio refs.

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LASJKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages.

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LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages.

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LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages.

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USSR

LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages

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LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages

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USSR

UDC 669.01.620.18

SOROKINA, L. P., and USIKOV, M. P., All-Union Scientific Research Institute of Aviation Materials, Institute of Physical Metallurgy and Metal Physics, and Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Change of Dislocation Structure of a Heat-Resistant Alloy in the Process of Creep"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 574-582

Abstract: The dislocation structure of alloy ZhS6KP was electronmicroscopically studied for structures being formed in the different stages of creep (at T = 900°C and TS = 27 kG/mm^2). It was shown that plastic deformation in the unsteady-state stage of creep is accomplished by means of intersection by dislocations of ordered, coherently bonded particles of the gamma-prime phase with matrix and the formation of complex superstructural deductive/interstitial stacking faults. Plastic deformation in the steady-state stage of creep proceeds as a result of dislocation movement in the solid solution (by means of slip and creepover) and is accompanied by the formation of stable configurations (dislocation walls and lattices)

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SOROKINA, L. P., and USIKOV, M. P., Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 574-582

in the matrix and on the surfaces of the gamma-prime and gamma-phase interface 100. The latter leads to a partial loss in the coherent bonding of the gamma-prime and gamma-phase lattices. Four figures, two tables, thirteen bibliographic references.

- E N D -

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